

## ABSTRACT OF THE DISCLOSURE

A carrier-phase-based relative positioning device employs a signal processing method which makes it possible to continue estimation of integer ambiguity values even when the number of positioning satellites has changed, determine an integer ambiguity value by efficiently verifying the integer ambiguities in a short time, and calculate a baseline vector. The positioning device includes an integer ambiguity resolving section which determines integer ambiguities of single or double phase differences using a Kalman filter and lambda notation. The Kalman filter is used to calculate estimated values of floating ambiguities and the lambda notation is used to calculate estimated values of the integer ambiguities based on the floating ambiguities. A candidate of a potentially true integer ambiguity that is considered most reliable is determined through various verification processes. When the number of positioning satellites has increased or decreased, or when a reference satellite has been switched, a floating ambiguity after the change in satellite information is estimated from a baseline vector estimated before the change.